

Missouri Assessment Program
Spring 2002

Science

Released Items
Grade 7

Confidential

9

A baseball player swings his bat and hits the baseball with a force of 8 newtons. How much force does the ball exert on the bat?

Describe two forces acting on the ball as it is flying through the air.

1.

2.

10

Some plants reproduce asexually by sending out an underground stem called a rhizome. At the growing end of the underground stem, roots appear and a shoot forms that will become a new plant.

Compare the traits of the new plant with the parent plant.

Explain your answer.

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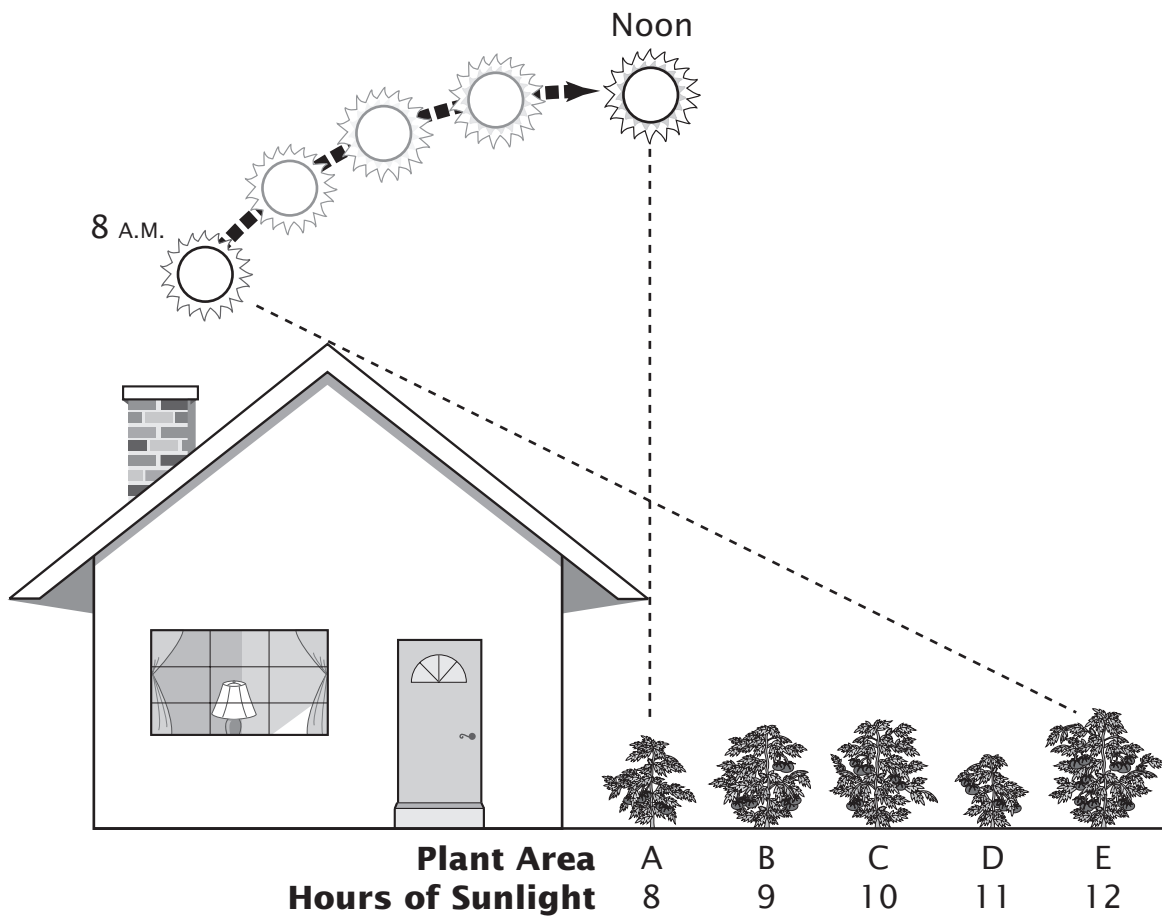
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Ada's Tomatoes

Four things affect plant growth: sunlight, water, air, and soil. Ada planted tomatoes in her garden. She chose to investigate the effect of the amount of sunlight on the size of the tomatoes.

Ada planted five tomato plants at different distances from her house. The picture below shows how the shadow of the house moves across the garden from 8:00 A.M. to noon. The plants closest to the house get the fewest hours of sunlight. The plants farthest from the house get the most hours of sunlight.



7

Ada decided to repeat her experiment using 100 tomato plants instead of 5. Why is it a good idea to use many plants instead of a few?

8

Ada read that the type of fertilizer can affect the size of tomatoes. She decided to compare organic fertilizer and chemical fertilizer.

- (a) Write a correctly worded question that could be the basis of her scientific investigation.

- (b) Write a correctly worded hypothesis for the question you wrote above.

9

What will be the independent and dependent variables in the experiment suggested in Number 8 ?

Independent variable _____

Dependent variable _____